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ONTARIO WATER  
RESOURCES COMMISSION

# ANNUAL REPORT

1962

VILLAGE OF FRANKFORD

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Frankford : water & sewage  
treatment plants.

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ANNUAL REPORT

ON

VILLAGE OF FRANKFORD

WATER AND SEWERAGE SYSTEMS

OWRC PROJECTS

57-W-2 AND 58-S-9

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FRANKFORD WATER & SEWAGE TREATMENT PLANTS

OPERATED FOR

THE VILLAGE OF FRANKFORD

BY

THE ONTARIO WATER RESOURCES COMMISSION

Mr. A. M. Snider	Chairman
Dr. A. E. Berry	General Manager
Mr. D. S. Caverly	Asst. General Manager, and Director, Plant Operations
Mr. B. C. Palmer	Assistant Director, Plant Operations Division
Mr. C. W. Perry	Supervisor, Water Projects Plant Operations Division
Mr. A. Clark	Project Engineer, Plant Operations Division

Prepared by the  
Division of Plant Operations



## FRANKFORD WATER SUPPLY

### WATER

Pumping Station and Well

Pumping capacity ----- 300 IGPM

Distribution System ----- 115,000 gallon standpipe reservoir  
water mains, hydrants, valves and  
appurtenances.

Capital Cost - \$119,313.00

Several problems were overcome in 1962

- a) A hydrant on Mill Street was relocated on the corner of Trent and Mill Streets.
- b) Some main valve boxes were raised to road grade on Mill Street.
- c) A leak on the roof of the pump house was sealed.

<u>Flows</u>	<u>Daily Average</u>	<u>Daily Maximum</u>	<u>Daily Minimum</u>	<u>Weekly Average</u>
January	41,677	66,500	28,200	291,739
February	45,161	73,900	23,400	316,127
March	34,255	47,900	22,200	239,785
April	34,747	56,100	21,300	243,229
May	53,961	90,200	22,400	377,727
June	65,430	112,700	24,300	458,010
July	90,432	141,400	44,800	633,024
August	65,265	114,700	23,000	456,855
September	52,780	158,900	27,000	369,460
October	48,213	79,100	30,500	337,491
November	41,017	63,500	21,900	287,119
December	40,552	54,100	32,800	283,864

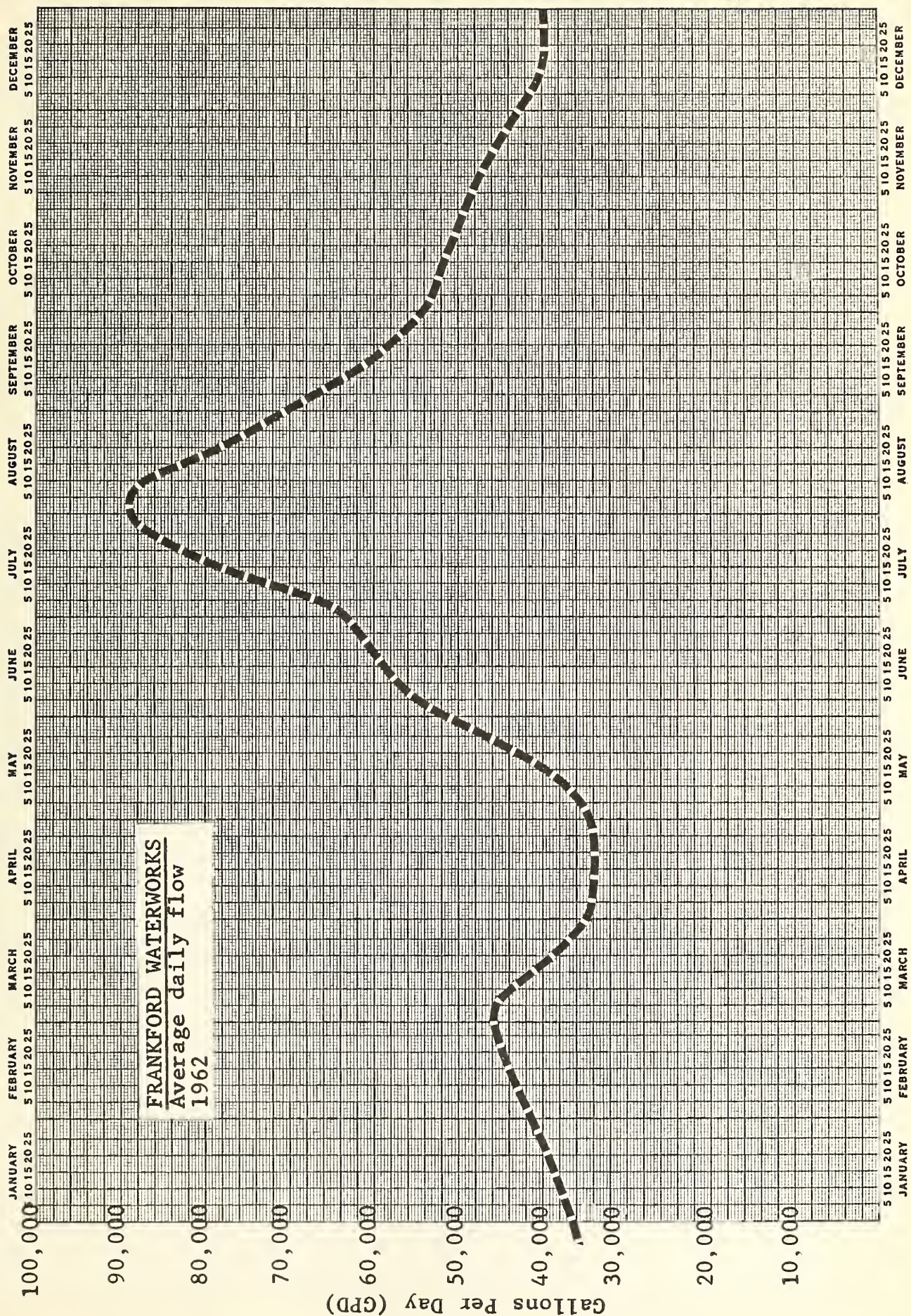
All above figures are in imperial gallons.



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Total flow for year	-	18,688,900 Gallons
Daily average for year	-	51,202 Gallons per day
Total annual flow 1960	-	11.457 Million Gallons
1961	-	14.756 Million Gallons
1962	-	18.688 Million Gallons

### SAMPLES

22 samples were submitted to OWRC laboratories for bacterial examination. All samples analysed grade A water.

### COSTS

<u>Cost of Operation in 1962</u>	<u>Forecast for 1962</u>
Payroll -	
Fuel -	
Power - \$ 512.25	\$ 400.00
General Supplies - 105.38	20.00
Equipment -	
Repairs & Maintenance - 71.60	500.00
Sundry - <u>381.82</u>	<u>200.00</u>
Total \$1071.05	\$1120.00
Cost per 1000 gallons of water	$\frac{107105}{18,668.9}$
	= 5.7¢



## FRANKFORD SEWERAGE SYSTEM

### DESCRIPTION

The sewage is collected in a system of sewers and brought to a collecting well at the sewage treatment plant.

Type of plant -- High rate trickling filter

Design Population -- 2700 ultimately

Per Capita Flow -- 200 gallons per day (3 DWF)

Design Plant Flow -- Primary: 540,000 gpd

Secondary: 120,000 gpd

### RAW SEWAGE PUMPING STATION

2 pumps - 1 electric, 1 cfs @ 20' head = 540,000 gpd

- 1 gasoline - standby

wet well - 16' x 3' x 3'

capacity 550 gallons (with tapered sump)

float control to pumps

### SCREENING

Coarse bar screen - 1/2" x 1 1/2" bars @ 1" crs.

### GRIT REMOVAL

2 units 2' x 9' x 12" water depth @ 1 cfs - velocity 0.5  
ft./sec.

### SETTLING TANK

- mechanically cleaned

16'6" x 60' x 7'5" water depth



Volume - 7455 cu. ft. or 46,500 gallons

Retention period @ 1 dfs = 2 hrs.

Surface settling rate - 565 gals/sq. ft. tank/day

Overflow rate - 33,800 gals/lin. ft. weir/day

#### TRICKLING FILTER

- design flow 120,000 gpd

42 ft. dia. 4 ft. deep

Media pass 5" retained on 3" screen

Recirculation 3:1 back through primary tank

1.5 lbs. BOD/cu. yd. media/day

#### FINAL SETTLING TANK

Earth banked pond 16' x 40' x 3' deep

Retention - 2 hrs.

also used as chlorine contact chamber.

Total Capital Cost - \$163,344.00.

No major operation problems were encountered in 1962 nor were any major changes made in operational procedure.

However, one source of pollution to the Trent River was located at King and Victoria Streets. At the request of Plant Operations Division, municipal forces made the necessary structural alterations and diverted this flow into the sanitary sewers.

There is no accurate means of measuring the sewage flow to the plant. However, by using the water demand figures, an evaluation of costs and efficiency can be made.

From water works figures 18.688 million gallons were pumped in 1962.





To this we might add 25% for storm and ground infiltration.  
This would give  $18.688 + 4.672$  million gallons  
= 23.310 million gallons of sewage treated at  
the plant.

Using this derived figure:

	<u>Influent</u>		<u>Effluent</u>	
	BOD	S.S.	BOD	S.S.
Average	106	106	36	31

lbs of BOD removed	=	$(106-36) \times 23.3 \times 10$
	=	16,000 lbs
lbs of S. S. removed	=	$(106-31) \times 23.3 \times 10$
	=	17,500 lbs

COST OF OPERATION 1962

Payroll	\$ 3898.53
Power	236.46
General Supplies	664.72 (including 187.50 for billing forms)
Equipment	82.21
Repairs and Maintenance	4.53
Sundry	<u>772.32</u> (including 88.26 MA charge)
Total	\$ 5936.00
Cost per lb. of BOD removed	37.5¢
Cost per lb. of S.S. removed	34.0¢
Cost per 1000 gallons of sewage treated	25.5¢



EFFICIENCY

<u>Date</u>	<u>Raw Sewage</u>		<u>Final Effluent</u>		<u>% Removed</u>	
<u>Week Ending</u>	<u>BOD</u>	<u>S.S.</u>	<u>BOD</u>	<u>S.S.</u>	<u>BOD</u>	<u>S.S.</u>
Jan. 13th	145	162	70	32	52	80
Jan. 27th	110	138	49	32	55.5	77
Feb. 10th	116	92	43	50	63	45.5
Mar. 17th	145	124	50	60	68	51.5
Mar. 31st	74	118	43	38	42	68
Apr. 21st	106	116	30	36	71.5	69
May 12th	165	142	36	44	78	69
June 16th	54	49	15	9	72	81.5
July 21st	48	62	22	15	54	76
Aug. 25th	76	78	15	18	80	77
Oct. 13th	155	113	24	22	84.5	80.5
Nov. 24th	85	79	36	20	57.5	74.5
Total	1279	1273	433	376	758.0	
Average	106.5	106	36	31	63%	

The above BOD and SS figures are in parts per million.



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